Istituto di Ricerca in Biomedicina
Institute for Research in Biomedicine

NEWS

October 2002

Dr. Markus Manz received the SWISS BRIDGE AWARD

In collaboration with Alfonso Martín-Fontecha, Amanda Gett, Federica Sallusto, and Antonio Lanzavecchia

Markus Manz received the Swiss Bridge Award for a research project on "Modeling Cellular Immunotherapy in Cancer".

Selective destruction of cancer cells without causing harm to healthy tissue is an ultimate goal in tumor therapy. To achieve this, malignant cells need to be eliminated by targeting structures selectively expressed by them. Cytotoxic T cells are a highly selective and efficient weapons of the immune system, which in theory could be perfect tools to eliminate tumor cells. However, in case of an established tumor the immune system obviously has either lost the battle, or more likely, is for many reasons not fighting the disease at all. By using model systems, the group studies two aspects of cellular immunotherapy. First, it is tested how to achieve most effective migration of antigen presenting dendritic cells to the draining lymph node and consecutive more efficient priming of naïve T cells, which then mount a specific immune response. Second, it is tested how T cells at defined stages of differentiation can be efficiently utilized in adoptive T cell therapy. Newly acquired knowledge from these studies might be of immediate impact for dendritic cell-based immunotherapy and adoptive T cell therapy in humans.

Dr. Anja Langenkamp first to finish her PhD at the IRB

Anja Langenkamp from Neviges (Germany) studied and graduated in biochemistry at the University Witten/Herdeke (Germany). In 1999 she begun to work on her PhD thesis in the group of Antonio

Lanzavecchia and Federica Sallusto at the Basel Institute of Immunology. In April 2000 when the IRB opened his doors for scientific work she moved to Bellinzona. In June 2002 Anja Langenkamp successfully defended her thesis on "The critical role of dendritic cells for T cell priming and differentiation" at the University of Witten/Herdeke.

In her thesis Anja Langenkamp provides new information on the regulation of T cell responses by dendritic cells. She shows the effects of microbial products and adjuvants for the maturation of human dendritic cells. A chapter of her thesis describes the precise kinetics of cytokine production by dendritic cells and the consequences for T cell polarization. She also identifies parameters that influence the efficiency of T cell priming and differentiation and investigates the distinct kinetics of chemokine receptor expression on differentiating T cells. The studies are published in renowned journals: *Eur. J. Immunol. (2000) 30:2394-403; Curr. Top. Microbiol. Immunol. (2000) 251:167-71; Nat. Immunol. (2000) 1:311-6 and Eur. J. Immunol. (2002) 32:2046-54.*

In June 2002 two undergraduate students, Stefania Campagnaro and Elena Palmesino, successfully presented their master theses performed at the IRB in the group of Antonio Lanzavecchia and Marcus Thelen at the Universities of Varese and Milano, respectively.